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R.A. (Al) Dodds, III
Director, Nuclear Safety Assurance
Waterford 3

W3F1-2004-0100

October 27, 2004

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Response to Request for Additional Information Regarding Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors"
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

By letter dated August 7, 2003, (W3F1-2003-0050) Entergy provided a 60-day response to NRC Bulletin 2003-01, Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors. NRC letter dated September 2, 2004 stated that a preliminary review of Entergy's response has been completed and a determination was made that additional information is needed. Attachment 1 provides the additional information requested in NRC letter dated September 2, 2004.

New commitments contained in this submittal are summarized in Attachment 2.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 27, 2004.

Sincerely,

R. A. Dodds, III

R. A. Dodds
Director, Nuclear Safety Assurance

RAD/GCS/cbh

Attachment(s)

A103

cc: Dr. Bruce S. Mallett
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Attachment 1

W3F1-2004-0100

Waterford 3's Response to NRC Bulletin 2003-01 Request for Additional Information

Bulletin 2003-01 RAI Responses

RAI 1: On page 1 of Attachment 1 of your Bulletin 2003-01 response, you state that you will train licensed operators on indications of and responses to emergency core cooling system (ECCS) sump clogging, with a completion date of March 31, 2004. However, although your response provides some detail regarding existing available indications which might be used to detect a sump clogging scenario, your response does not completely discuss the operator training to be implemented. Please provide a detailed discussion of the operating procedures to be implemented, the indications of sump clogging that the operators are instructed to monitor, and the response actions the operators are instructed to take in the event of sump clogging and loss of ECCS recirculation capability.

Response

The following Emergency Operating Procedures, OP-902-002, Loss of Coolant Accident and OP-902-008, Safety Function Recovery Procedure are the documents that will be used to specify and address indications of sump clogging. These procedures address the availability of alternate water sources to supplement the RWSP in the event the emergency core cooling sump is clogged. The water sources will be as follows:

- Borated water sources are available for injection by either the HPSI pumps or the charging pumps
- Transfer of excess spent fuel pool (SFP) inventory to the RWSP
- Transfer of any holdup tank inventory to the RWSP
- Manually unisolate the Volume Control Tank and inject the remaining volume into the RWSP using the charging pumps
- To provide additional borated inventory to the RWSP, water from the SFP can be transferred to the RWSP. The SFP can be replenished from the condensate storage pool or the fire protection system.
- Pure unborated makeup water can be provided directly to the suction of the charging pumps or to the RWSP for injection by the HPSI pumps

Regarding indications of sump clogging, the operators are instructed to monitor, for abnormal conditions, the following parameters as possible indicators of emergency core cooling sump blockage:

- ECCS sump level – Normally $\geq$ 10 feet during Recirculation Actuation Signal
- High Pressure Safety Injection (HPSI) pump flow
- HPSI pump discharge pressure
- HPSI pump current
- Containment Spray (CS) discharge pressure

- CS pump current
- Containment pressure

The response action the operators are instructed to take following the above indications is, in addition to obtaining alternate sources of water, to secure redundant high pressure safety injection pumps and containment spray pumps when indication of sump blockage occurs. Both of these pumps take suction from the emergency core cooling sump following a recirculation actuation signal.

RAI 2: On Page 2 of Attachment 1 of your response you state: "Entergy's procedures delay switchover to the ECCS sump recirculation to the extent practical...Potential changes to the guidance in CEN-152 are being evaluated by Westinghouse. Procedure changes have not been implemented at this time..." Westinghouse Owner's Group (WOG) has developed operational guidance in response to Bulletin 2003-01 for Westinghouse and Combustion Engineering type pressurized water reactors. Please provide a discussion of your plans to consider implementing this new WOG guidance. Include a discussion of the WOG recommended compensatory measures that have been or will be implemented at your plant, and the evaluations or analyses performed to determine which of the WOG recommended compensatory measures not being implemented by your plant. Provide technical justification for those WOG recommended compensatory measures not being implemented by your plant. Also include a detail discussion of the procedures being modified, the operator training being implemented, and your schedule for implementing these compensatory measures.

Response

Waterford 3 has reviewed WOG recommended compensatory measures provided in CEN-152. The recommended actions in CEN-152 will be implemented in Waterford 3 Emergency Operating Procedures with one exception related to Alternate RCS Injection. Specifically, the CEN states, as a means of providing water to the RCS, to initiate actions to lineup to inject directly to the RCS bypassing the RWSP. This action will not be taken at Waterford 3 as the plant lineup cannot inject water directly to the RCS. CEN-152 actions will be incorporated in Emergency Operating Procedures, OP-902-002, Loss of Coolant Accident and OP-902-008, Safety Function Recovery. The training associated with CEN-152 actions will be performed in the 2005 cycle 2 License Operator requalification training. The training will consist of a review of the procedure changes and the basis for the changes.

RAI 3: NRC Bulletin 2003-01 provides possible interim compensatory measures licensees could consider to reduce risks associated with sump clogging. In addition to those compensatory measures listed in Bulletin 2003-01, licensees may also consider implementing unique or plant-specific compensatory measures, as applicable. Please discuss any possible unique or plant-specific compensatory measures you considered for implementation at your plant. Include a basis for rejecting any of these additional considered measures.

Response

Waterford 3 does not implement any unique or plant specific compensatory measures for ECCS sump clogging. The compensatory measures to be used by Waterford 3 are delineated in Bulletin 2003-01.

Attachment 2

W3F1-2004-0100

List of Regulatory Commitments

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
CEN-152 actions will be incorporated in Emergency Operating Procedures, OP-902-002, Loss of Coolant Accident and OP-902-008, Safety Function Recovery.		X	2/28/2005
The training associated with CEN-152 actions will be performed in the 2005 cycle 2 License Operator requalification training. The training will consist of a review of the procedure changes and the basis for the changes.		X	4/15/2005
The following Emergency Operating Procedures, OP-902-002, Loss of Coolant Accident and OP-902-008, Safety Function Recovery Procedure are the documents that will be used to specify and address indications of sump clogging. These procedures address the availability of alternate water sources to supplement the RWSP in the event the emergency core cooling sump is clogged. The water sources will be as follows: • Borated water sources are available for injection by either the HPSI pumps or the charging pumps • Transfer of excess spent fuel pool (SFP) inventory to the RWSP • Transfer of any holdup tank inventory to the RWSP • Manually unisolate the Volume Control Tank and inject the remaining volume into the RWSP using the charging		X	2/28/2005

pumps • To provide additional borated inventory to the RWSP, water from the SFP can be transferred to the RWSP. The SFP can be replenished from the condensate storage pool or the fire protection system. • Pure unborated makeup water can be provided directly to the suction of the charging pumps or to the RWSP for injection by the HPSI pumps			